



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,902	12/20/2000	Michelle A. Miller	TI-31034	8958

23494 7590 06/14/2004

TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER

HAVAN, THU THAO

ART UNIT	PAPER NUMBER
----------	--------------

2672

16

DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/742,902

Applicant(s)

MILLER ET AL.

Examiner

Thu-Thao Havan

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Claims **1-22** are pending in the present application.

Applicant's arguments filed March 29, 2004 have been fully considered but they are not persuasive. As addressed below, Tanaka and Akaza teach the claimed limitations.

Akaza teaches allowing the user to jump the cursor between intersection points with a single key command on the points of interest display screen (col. 4, line 46 to col. 6, line 64; col. 7, line 55 to col. 8, line 15; col. 10, lines 37-47; col. 13, line 59 to col. 14, line 49; figs 4, 6a, and 10b). In other words, Akaza discloses key-in unit input by the cursor is jump between the intersection points by movement between the x and y coordinates. The x and y coordinates are the intersection points. Therefore, in figure 6b display data indicative of the first functional inequality " $Y1 \geq X^2$ " transferred to the color data memory from the display register and displayed is converted to data "2" (blue display), which is then displayed in blue while displayed data on the cursor-selected second functional inequality " $Y2 \leq X$ " and its expression selection frame is converted to "3" (red display,) which is then displayed in red. Thus, the movement of the cursor changes the x and y coordinates and the color coordinates. In addition, in the inequality operation, the input functional inequality is selected by the cursor operation and the "color" key is operated to change the designated color data on the selected functional expression optionally. Thus, the selected functional inequality and its graph data is displayed in a color corresponding to the designated color data as

well as the effective range common to the respective functional inequalities is displayed in green which is not present among the designated colors of the graph data. Thus, the respective functional inequalities, corresponding graph data, and the common effective range are displayed very plainly.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **1-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (US patent no. 5,907,317) in view of Akaza et al. (US patent no. 5,739,823).

Re claims **1, 8, and 15**, Tanaka discloses a graphing calculator having a points of interest user interface (col. 1, lines 12-25) comprising: a screen capable of displaying at least straight lines in any direction and a cursor (col. 4, lines 26-53; figs. 4 and 5g); a key panel having keys at least capable of selecting positions of cursor and moving cursor horizontally or vertically on screen (col. 5, line 43 to col. 6, line 11; fig. 1); a processor for executing programming (fig. 1) that provides a point of interest user interface having the following steps: a) providing an input display to allow the user to define a plurality of equations, inequalities and vertical lines (col. 5, lines 43-49), b) graph the defined equations, inequalities and vertical lines (fig. 4 and 5g), c) provide a

Art Unit: 2672

points of interest display screen (col. 1, lines 58-67; col. 2, lines 1-30; col. 3, lines 20-56; col. 4, lines 8-10).

Tanaka fails to explicitly teach as claimed allowing the user to jump the cursor between intersection points with a single key command on the points of interest display screen. Akaza, on the other hand, teaches allowing the user to jump the cursor between intersection points with a single key command on the points of interest display screen (col. 4, lines 46-55; col. 7, line 55 to col. 8, line 15; col. 10, lines 37-47; col. 13, line 59 to col. 14, line 49; figs 4, 6a, and 10b). He teaches when the cursor key 12f is operated, it is confirmed on the basis of the graph/expression flag register G that the display state of the input expressions is $G=0$. Each time the cursor key 12f is operated, data on an expression selection frame is moved from the display register 18 through the color data memory 15 such that the frame selectively encloses and displays one of the three functional expressions " $Y_1=X^2$ ", " $Y_2=2X$ ", " $Y_3=X-4$ " displayed on the display 17 sequentially in this order. In this case, the input functional expression $Y_2=2X$ is selected in FIG. 4B (steps B9-B11). Furthermore, he discloses each time the cursor key is operated, data on an expression selection frame is moved from the display register through the color data memory such that the frame selectively encloses and displays one of the two functional inequalities " $Y_1 \geq X^2$ " and " $Y_2 \geq X$ " sequentially in this order. In this case, the inequality " $Y_2 \geq X$ " is selected (steps C20-C22 of figure 6a). Therefore, having the combined teaching of Tanaka and Akaza as a whole, one of ordinary skill in the art would have found it obvious to modify graphing display of Tanaka to allow the user to jump the cursor between intersection

Art Unit: 2672

points with a single key command on the points of interest display screen as claimed. Doing so would enable the cursor to move to the ending point of the desired graph enlargement range on the display (Akaza: col. 4, lines 46-55; col. 7, line 55 to col. 8, line 15; col. 10, lines 37-47; col. 13, line 59 to col. 14, line 49; figs 4, 6a, and 10b).

Re claims **2 and 16**, Akaza teaches store the location of the cursor at desired points with a store command that comprises a single key stroke (col. 14, lines 40-55). In other words, Akaza discloses when the "enter" key is operated, data on the coordinates of the position of the cursor k is additionally stored in the RAM as the coordinates of the end of the box indicative of the graph enlargement range and two points as the starting and ending coordinates of the box are designated.

Re claims **3, 9, and 17**, Tanaka teaches display the stored points of interest and use the stored points of interest for other calculator functions (col. 5, lines 27-30; col. 1, lines 5-10).

Re claims **4, 10, and 18**, Tanaka teaches input equations, inequalities and lines using a Y=Editor and an X=Editor (col. 6, line 39 to col. 7, line 18).

Re claim **5**, Tanaka teaches an indication on the display of the current coordinates of the cursor (col. 8, lines 7-59). The current coordinates of the cursor are in black and the user can change it to different color code.

Re claims **6-7, 11-12, and 19-20**, Tanaka teaches an indication on the display of which equation, inequality or vertical lines contributed to the point of interest indicated at the cursor location includes the intersection symbol for equations that include the line

and does not use the intersection symbol for strict inequalities (figs. 5a to 8). In figure 8, Tanaka teaches the stored cursor position to graph the color-coded coordinates.

Re claims **13 and 21**, Tanaka teaches an algorithm to computer intersection points using a numerical root-finder which uses XMIN and XMAN for the graph window as the upper and lower bounds on the solution and the initial guess taken as the current cursor position (col. 4, line 26 to col. 6).

Re claims **14 and 22**, Tanaka teaches the Simplex algorithm (figs. 5a-5g).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu-Thao Havan whose telephone number is (703) 308-7062. The examiner can normally be reached on Monday to Thursday from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703) 305-4713.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231


or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Thu-Thao Havan
June 2, 2004



MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600